```c
#include <stdbool.h>
#include <stdio.h>
#define MAX 5
int QUEUE[MAX], REAR =-1, FRONT =-1;
void insertRear();
void deleteFront();
void deleteRear();
void insertFront();
void display();
bool isFull();
bool isEmpty();
int main() {
int choice;
printf("Menu:\n 1. Insert from Rear\n 2. Delete from Front\n 3. "
"Insert from Front\n 4. Delete from Rear\n 5. Display\n 6. Exit\n");
while (true) {
printf("\nEnter choice: ");
scanf("%d", &choice);
switch (choice) {
case 1:
insertRear();
break;
case 2:
deleteFront();
break;
case 3:
insertFront();
break;
case 4:
deleteRear();
break;
case 5:
display();
break;
case 6:
printf("Exiting...\n");
return 0;
default:
printf("Invalid choice");
break;
}
}
```


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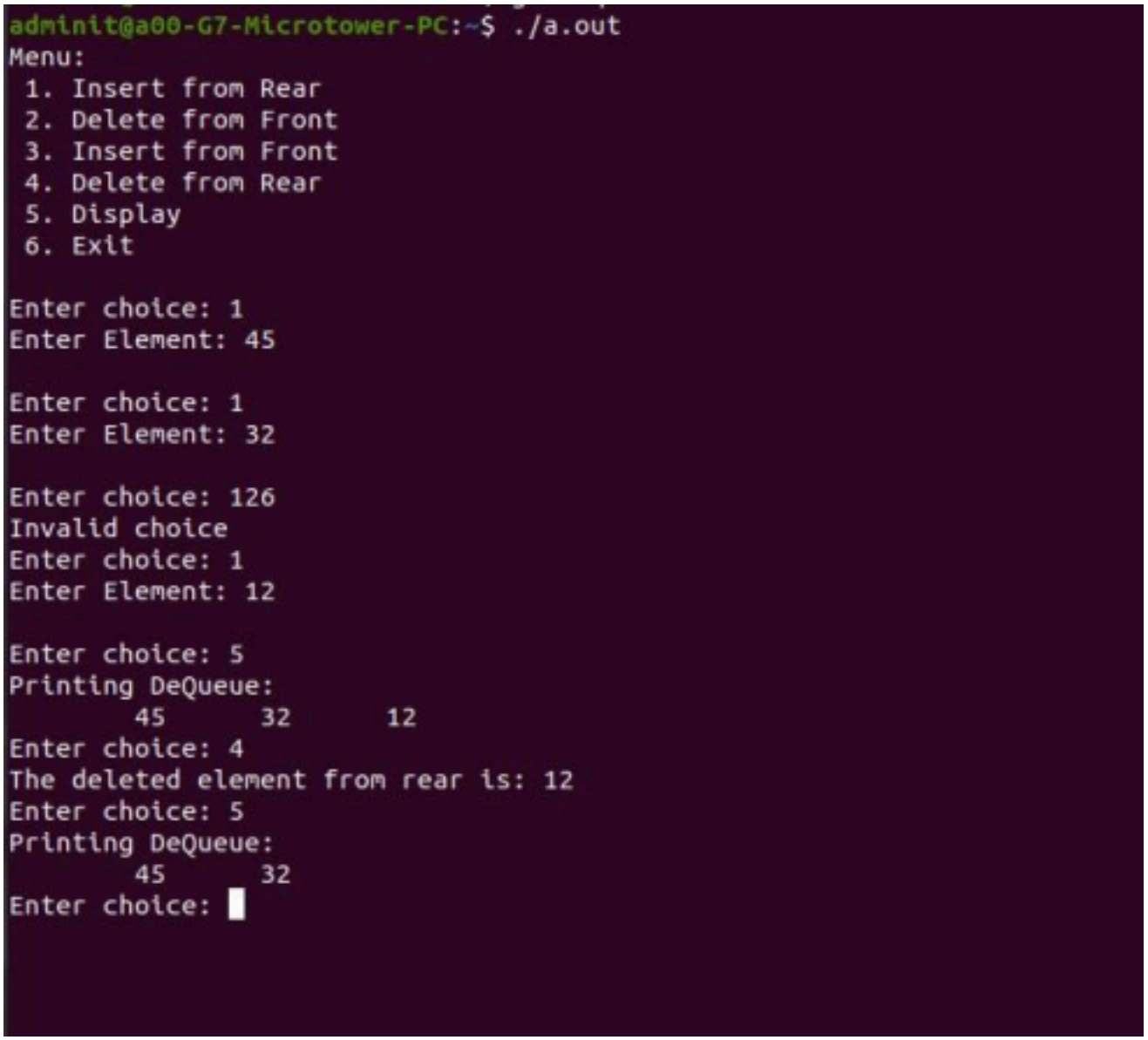
```
return 0;
}
bool isFull() { return REAR == MAX- 1; }
bool isEmpty() { return FRONT < 0; }
void insertRear() {
int a;
if (isFull()) {
printf("Queue is full");

}
if (FRONT ==-1)
FRONT++;
printf("Enter Element: ");
scanf("%d", &a);
QUEUE[++REAR] = a;
}
void deleteFront() {
int value;
if (isEmpty()) {
printf("Queue Empty");
return;
}
value = QUEUE[FRONT];
if (REAR == FRONT)
FRONT=REAR=-1;
else
FRONT++;
printf("The deleted element from front is: %d", value);
}
void deleteRear() {
int value;
if (isEmpty()) {
printf("Queue Empty");
return;
}
value = QUEUE[REAR];
if (REAR == FRONT)
FRONT=REAR=-1;
else
REAR--;
printf("The deleted element from rear is: %d", value);
}
```

```
FRONT=REAR=-1;
else
FRONT++;
printf("The deleted element from front is: %d", value);
}
void deleteRear() {
int value;
if (isEmpty()) {
printf("Queue Empty");
return;
}
value = QUEUE[REAR];
if (REAR == FRONT)
FRONT=REAR=-1;
else
REAR--;
printf("The deleted element from rear is: %d", value);
}
void insertFront() {
if (FRONT == 0) {
printf("Front is at the beginning- insertion not possible");
return;
}
if (FRONT ==-1) {
FRONT++;
REAR++;
} else
FRONT--;
int x;
printf("Enter Element: ");
scanf("%d", &x);
QUEUE[FRONT] = x;
}
void display() {
if (isEmpty()) {
printf("Queue Empty");
return;
}
printf("Printing DeQueue:\n");
for (int i = FRONT; i <= REAR; i++)
printf("\t%d", QUEUE[i]);
}
```

OUTPUT:



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